IT Unit 3

Topic 2

# Ch 2, Data Analytics: Drawing Conclusions, Part 1

**What is data?, p 73**

1. Describe the nature of data.

* Data is made up of facts and statistics. Raw facts have no context to them, so you cannot make much sense of them, or give them any meaning, to understand and make meaning of your data, you need to process it, converting it into something useful: information.

**What is a hypothesis?**

1. Describe what a hypothesis is.

* An educated guess or a prediction that you can test in a scientific way, a hypothesis tries to explain an observation or unexplained pattern, and often written in the form of a n ‘If…then…’ statement, though it can also be a question or a conditional statement.

1. What are the characteristics of a reasonable hypothesis?

* It should be able to generate a testable prediction
* It should be identifying the variables
* It must be testable
* It needs at least some supporting evidence or observation
* It is not trivial
* It should be able to make testable prediction

1. Can a hypothesis be proven? Distinguish between proof, support and refutation

* A hypothesis can never be proven true with data; it can only ever be supported. However, any hypothesis can be refuted (proven to be false). A reasonable hypothesis is not like a debate topic with equally valid opinions on both sides. You must able to objectively support it or refute it.